

Andropogon gerardii - Schizachyrium scoparium Western Great Plains Herbaceous Vegetation

COMMON NAME	Big Bluestem - Little Bluestem Western Great Plains Herbaceous Vegetation
SYNONYM	Western Bluestem Tallgrass Prairie
PHYSIOGNOMIC CLASS	Herbaceous Vegetation (V)
PHYSIOGNOMIC SUBCLASS	Perennial graminoid vegetation (V.A)
PHYSIOGNOMIC GROUP	Temperate or subpolar grassland (V.A.5)
PHYSIOGNOMIC SUBGROUP	Natural/Semi-natural (V.A.5.N)
FORMATION	Tall sod temperate grassland (V.A.5.N.a)
ALLIANCE	<i>Andropogon gerardii</i> - (<i>Sorghastrum nutans</i>) Herbaceous Alliance

CLASSIFICATION CONFIDENCE LEVEL 1

USFWS WETLAND SYSTEM Upland

RANGE

Globally

The *Andropogon gerardii* - *Schizachyrium scoparium* Western Great Plains Herbaceous Vegetation association occurs along the eastern foothills of the Rocky Mountains in Colorado and on basalt outcrops in the southeastern portion of the state (CNHP 1997). Johnston (1987) indicates that this association also occurs in Montana, Nebraska, Kansas, and the Dakotas, but Colorado Natural Heritage Program ecologists believe these occurrences outside of Colorado differ from the Colorado element because the association structure differs and they lack midwestern species.

Wind Cave National Park

Big bluestem - little bluestem grassland is common on slopes in the eastern half of Wind Cave NP. Exemplary stands can be found on the west side of Boland Ridge, and on the slopes of the broad flat ridges found along the eastern half of the north Park boundary.

ENVIRONMENTAL DESCRIPTION

Globally

This community occurs in nearly level to gently sloping (0-20% slope), park-like openings in ponderosa pine forests at 3,700-4,100 ft elevation. Most stands occurred on east or north aspects. Mean annual precipitation is 38-48 cm. Soils are loamy: clay loam, sandy loam and sandy clay loam (Taylor and Holst 1976). Parent materials are sandstone, siltstone, and claystone (Veseth and Montagne 1980).

Wind Cave National Park

Big bluestem - little bluestem grassland occurs on somewhat steep to steep slopes that are often rocky. Aspect varies.

MOST ABUNDANT SPECIES

Globally

<u>Stratum</u>	<u>Species</u>
Herbaceous	<i>Andropogon gerardii</i> , <i>Bouteloua curtipendula</i> , <i>Calamovilfa longifolia</i> , <i>Carex inops</i> ssp. <i>heliophila</i> , <i>Festuca idahoensis</i> , <i>Schizachyrium scoparium</i>

Wind Cave National Park

<u>Stratum</u>	<u>Species</u>
Herbaceous	<i>Andropogon gerardii</i> , <i>Bouteloua curtipendula</i>

CHARACTERISTIC SPECIES

Globally

Andropogon gerardii, *Schizachyrium scoparium*

Wind Cave National Park

Andropogon gerardii, *Schizachyrium scoparium*

VEGETATION DESCRIPTION

Globally

USGS-NPS Vegetation Mapping Program
Wind Cave National Park

Stands are dominated by the tall grasses *Andropogon gerardii* and *Schizachyrium scoparium*. *Calamovilfa longifolia* may be common on more coarse-textured soils, whereas *Festuca idahoensis* may be common in mesic stands. *Bouteloua curtipendula* and *Carex inops* ssp. *heliophila* are other important graminoids. Common forbs include *Psoralea argophylla* and *Artemisia ludoviciana*. *Gutierrezia sarothrae* is a common dwarf shrub (Taylor and Holst 1976, Culwell and Skow 1981, Culwell and Skow 1982, Pase and Thelinius 1968). At Wind Cave NP in South Dakota, this grassland type is dominated by *Andropogon gerardii*. Species distribution is patchy, with big bluestem often occupying large areas to the exclusion of other species. *Bouteloua curtipendula* may be codominant and *Schizachyrium scoparium* cover is sparse to absent (H. Marriott personal communication 1999).

Wind Cave National Park

Stands of big bluestem - little bluestem have moderate to dense herbaceous cover, typically in the 50 - 75% range, and often greater. This grassland type is dominated by big bluestem (*Andropogon gerardii*). Species distribution is patchy, with big bluestem often occupying large areas to the exclusion of other species. Side-oats grama (*Bouteloua curtipendula*) may be codominant. Little bluestem (*Schizachyrium scoparium*) cover is sparse, or the species may be absent altogether. Big bluestem cover typically increases though the growing season, but there may be little vegetative production and no flowering stems in extremely dry years. Big bluestem can be a late season dominant in other grassland types at Wind Cave NP also.

Big bluestem is a warm-season grass, becoming more dominant late in the growing season. Cover varies greatly with seasonal conditions, with abundant late season moisture being quite favorable. At Wind Cave NP, little bluestem may be sparse or absent stands of this type, and side-oats grama (*Bouteloua curtipendula*) is often abundant.

OTHER NOTEWORTHY SPECIES

CONSERVATION RANK G2. The *Andropogon gerardii* - *Schizachyrium scoparium* association is a regional endemic that occurs along the eastern foothills of the Rocky Mountains in Colorado and on basalt outcrops in the southeastern portion of the state (CO NHP 1997). There are twenty documented occurrences of this association. Of these occurrences, none is ranked A, five are ranked B, and forty percent are not considered viable (ranked D or H). The region in which this association is found (Colorado's Front Range and southeast Colorado) have been surveyed to a large extent by the Colorado Natural Heritage Program, so few if any additional high-quality occurrences can be expected. This association is known from about 4000 acres. Over half this amount is contained within one occurrence. Given that a vast area where this association may have formerly occurred has been developed, converted to agricultural use, or invaded by weedy species, it can be confidently assumed that this association occurs in less than ten percent of its former habitat. This association remains very threatened by development along the Front Range, gravel mining operations (e.g., near Rocky Flats), and invasion by woody species in response to a lack of fire.

DATABASE CODE CEGL001463

MAP UNITS

Big bluestem was found in many habitats and vegetation types, but only stands dominated by big bluestem with little bluestem and/or side-oats grama were recognized as a big bluestem plant community. The big bluestem - little bluestem community is one of the types included in map unit 16, western wheatgrass - Kentucky bluegrass complex, on the Wind Cave vegetation map. It is not mapped separately.

COMMENTS

Wind Cave National Park

Patches of big bluestem can occur in little bluestem grasslands. However, the habitat of the big bluestem - little bluestem community differs. This type typically occurs on steeper, rocky slopes. In addition, big bluestem is strongly dominant, and little bluestem is often uncommon or even absent. Side-oats grama is often codominant.

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